

Five new records for the lichen biota of Turkey

KADIR KINALIOĞLU

kkinalioglu@hotmail.com

Giresun University, Faculty of Science and Arts, Department of Biology
28049, Giresun, Turkey

Abstract—Five lichen species (*Bacidia sipmanii*, *Buellia caldesiana*, *Byssoloma leucoblepharum*, *Collema occultatum* and *Porina lectissima*) are reported for the first time from Turkey. For each a short description is presented.

Key Words —biodiversity, Giresun, Konakönü

Introduction

Large parts of Turkey are still very insufficiently explored with regard to their lichen biota. In the last four years, however, many new lichen species have been reported for Turkey (e.g. Aslan et al. 2005, Breuss & John 2004, Candan & Özdemir Türk 2008, Çobanoğlu et al. 2008, Halıcı et al. 2007, Kınalıoğlu 2009a,b, Tufan et al. 2005, Yazıcı 2007 et al.).

For Trabzon province in the eastern Black Sea region 518 species have been reported (John 1995 [and references therein], 1999, 2000, 2002; John & Breuss 2004; John & Nimis 1998; John et al. 2000; Kınalıoğlu 2007b, 2008; Kınalıoğlu & Engin 2004; Yazıcı 1996, 1999, 2006; Yazıcı & Aslan 2002, 2005) and for Giresun province only 431 species (Aslan et al. 2002; Aslan & Yazıcı 2006; Duman & Yurdakulol 2007; Halıcı & Şenkardeşler 2009; John & Breuss 2004; Kınalıoğlu 2005, 2006, 2008, 2009; Kınalıoğlu & Engin 2004; Küçük 1990; Özgen et al. 2003; Steiner 1909; Süleyman et al. 2002; Yazıcı 2006; Yazıcı & Aptroot 2008). The present paper is a further contribution to the lichen biota of these provinces.

Materials and methods

Samples were collected in Trabzon and Giresun provinces between 2006 and 2008. They were identified with various lichen guides (e.g. Brodo et al. 2001, Purvis et al. 1992, Wirth 1995). The specimens are stored in the herbarium

of the Faculty of Science and Arts, Giresun University, Giresun, Turkey; with some duplicates in herb. H. Sipman. The accession numbers of the collections are given in parentheses after the locality details.

Taxonomy

Bacidia sipmanii M. Brand et al.

A detailed description is provided by Brand et al. (2009).

The Turkish specimen was collected from siliceous rock. Thallus crustose, thin, small, areolate, grey-brown. Apothecia 0.1–0.9 mm diam., often few; disc slightly convex, light brown to dark brown or blackish brown, with a darker margin. Hymenium colourless, 43–60 μm tall; paraphyses simple, apices slightly swollen to 2 μm . Ascospores colourless, $25\text{--}45 \times 1.5\text{--}2.5 \mu\text{m}$, 4–8 celled. Conidia $20\text{--}28 \times 0.8\text{--}0.9 \mu\text{m}$, strongly curved. Thallus C–, K–, KC–, PD–.

Known from England, Ireland, France, Italy, and the Canary Islands on siliceous maritime rocks in the xeric supralittoral zone in crevices and underhangs, on vertical shaded volcanic outcrops and rarely on soil (Brand et al. 2009).

SPECIMEN EXAMINED: Trabzon, Araklı, Konakönü place, sea shore, $40^{\circ}57'17''\text{N}$, $40^{\circ}02'56''\text{E}$, 3 m, 12 Aug. 2006, on siliceous rock, det. H. Sipman, (Kınalıoğlu 1568).

Buellia caldesiana Bagl.

A detailed description is provided by Scheidegger (1993).

The Turkish specimen was collected from siliceous rock. Thallus light yellowish or dirty white, crustose, rimose to areolate. Apothecia 0.3–0.8 mm diam, immarginate to thinly marginate; disc black, plane, weakly whitish pruinose. Hymenium 60–75 μm tall; epithecium olive. Hypothecium dark brownish. Asci *Lecanora*-type. Ascospores brown, 1-septate, oblong, $12\text{--}13 \times 6.5\text{--}7 \mu\text{m}$. Conidia not observed. Thallus C + orange.

Known from Europe on more or less calcareous rocks (Scheidegger 1993).

SPECIMEN EXAMINED: Giresun, Center, SE slope of Gedikkaya hill, $40^{\circ}54'35''\text{N}$, $38^{\circ}24'48''\text{E}$, 190 m, 10 June 2006, on siliceous rock, det. H. Sipman, (Kınalıoğlu 1544).

Byssoloma leucoblepharum (Nyl.) Vain.

A detailed description is provided by Purvis et al. (1992).

The Turkish specimen was collected from *Erica arborea*. Thallus crustose, brownish-greyish, mostly thin. Apothecia 0.3–1.1 mm diam, flat; disc dark orange-brown, with a white-grey woolly margin spreading onto the thallus surface. Hypothecium brownish. Ascospores $10\text{--}17 \times 2.5\text{--}4 \mu\text{m}$ diam., 4-celled, colourless. Thallus C–, K–, KC–, PD–.

Widely distributed in tropical and subtropical regions, extending to the temperate zone, on bark and leaves (Purvis et al. 1992).

SPECIMEN EXAMINED: Trabzon, Araklı, Konakönü place, 40°57'44"N, 40°02'32"E, 8 m, 12 Aug. 2006, on *Erica arborea*, det. H. Sipman, (Kınalıoğlu 1690).

Collema occultatum Bagl.

A detailed description is provided by Purvis et al. (1992) and Zedda et al. (2009: 157).

The Turkish specimen was collected from *Fraxinus* sp. Thallus small, dark brownish, mostly scattered lobes, subcrustose to minutely globose or with foliose lobes. Apothecia dispersed or aggregated; disc 0.2–0.4 mm diam., flat to convex, brown, pink when young and black when mature. Ascospores 13–21.5 × 9–15 µm, cuboid-oblong, submuriform.

Known from Europe (especially Mediterranean region), North Africa and North America, on bark. (Purvis et al. 1992, Zedda et al. 2009).

SPECIMEN EXAMINED: Trabzon, Araklı, Konakönü place, 40°57'44"N, 40°02'32"E, 8 m, 12 Aug. 2006, on *Fraxinus* sp., det. H. Sipman, (Kınalıoğlu 1694).

Porina lectissima (Fr.) Zahlbr.

A detailed description is provided by Purvis et al. (1992).

The Turkish specimen was collected from siliceous rock. Thallus brownish green, irregularly cracked, thin. Perithecia reddish dark brown or partly pinkish, projecting above the thallus surface, 0.2–0.4 mm diam. Ascospores 3-septate when mature, fusiform, colourless, 20–32 × 4–8 µm. Asci 8-spored, thin walled.

Known from Europe and North America on damp siliceous rock (Purvis et al. 1992).

SPECIMEN EXAMINED: Trabzon, Araklı, Konakönü place, sea shore, 40°57'17"N, 40°02'56"E, 3 m, 12 Aug. 2006, on siliceous rock, det. H. Sipman, (Kınalıoğlu 1569).

Acknowledgements

I would like to thank Dr. H. Sipman (Berlin, Germany) for the identification of the taxa. I also thank peer-reviewers Prof. Dr. V. Alstrup & for Dr. A. Orange their contributions on revising article.

Literature cited

- Aslan A, Aptroot A, Yazıcı K. 2002. New lichens for Turkey. *Mycotaxon* 84: 227–280.
 Aslan A, Vezda A, Yazıcı K, Karagöz Y. 2005. New foliicolous lichen records for the lichen flora of Turkey. *Cryptogamie, Mycologie* 26(1): 61–66.
 Aslan A, Yazıcı K. 2006. Contribution to the lichen flora of Giresun province of Turkey. *Acta Botanica Hungarica* 48(3–4): 231–245.

- Brand M, Coppins BJ, van den Boom PPG, Sérusiaux E. 2009. Further data on the lichen genus *Bacidia* s.l. in the Canary Islands and Western Europe, with descriptions of two new species. *Bibliotheca Lichenologica*, 99: 83–93.
- Breuss O, John V. 2004. New and interesting records of lichens from Turkey. *Österr. Z. Pilzk.* 13: 281–294.
- Brodo IM, Sharnoff SD, Sharnoff S. 2001. *Lichens of North America*. Yale University Press, New Haven and London.
- Candan M, Özdemir Türk A. 2008. Lichens of Malatya, Elazığ and Adıyaman provinces (Turkey). *Mycotaxon* 105: 19–22.
- Çobanoğlu G, Sevgi E, Sevgi O. 2008. Epiphytic lichen mycota of, and new records from, Şerif Yüksel research forest, Bolu, Turkey. *Mycologia Balcanica* 5: 135–140.
- Duman C, Yurdakulol E. 2007. Lichen records from Sarıçiçek Mountain in southern Giresun province, Turkey. *Turk J. Bot.* 31: 357–365.
- Halıcı MG, Candan M, Özdemir Türk A. 2007. New records of lichenicolous and lichenized fungi from Turkey. *Mycotaxon* 100: 255–260.
- Halıcı MG, Şenkardeşler A. 2009. Giresun için yeni kayıt: *Phaeosporobolus usneae*. *Türk liken toluluğu bülteni* 7: 11–12.
- John V. 1995. *Flechten der Türkei IV. Ergänzungen zum die Türkei betreffende lichenologische Schrifttum*. Neunkirchener Druckerei und Verlag, Neunkirchen, Germany.
- John V. 1999. *Lichenes Anatolici Exsiccati*. Fasc. 1–3 (No: 1–75). *Arnoldia* 16: 1–41.
- John V. 2000. *Lichenes Anatolici Exsiccati*. Fasc. 4–5 (No: 76–125). *Arnoldia* 19: 1–27.
- John V. 2002. *Lichenes Anatolici Exsiccati*. Fasc. 6–7 (No: 126–175). *Arnoldia* 21: 1–28.
- John V, Breuss O. 2004. *Flechten der östlichen Schwarzmeer-Region in der Türkei (BLAM Exkursion 1997)*. *Herzogia* 17: 137–156.
- John V, Nimis PL. 1998. Lichen flora of Amanos mountain and the province of Hatay. *Turkish Journal of Botany* 22: 257–267.
- John V, Seaward MRD, Beaty JW. 2000. A neglected lichen collection from Turkey: Berkhamsted School Expedition 1971. *Turkish Journal of Botany* 24: 239–248.
- Kınalıoğlu K. 2005. Lichens of Giresun district, Giresun province, Turkey. *Turkish Journal of Botany* 29: 417–423.
- Kınalıoğlu K. 2006. Lichens of Keşap district (Giresun, Turkey). *Acta Botanica Hungarica* 48(12): 65–76.
- Kınalıoğlu K. 2007b. Lichens of the alpine region in Araklı–Sürmene district, Trabzon province (Turkey). *Cryptogamie, Mycologie* 28 (2): 159–168.
- Kınalıoğlu K. 2008. Three new records for the lichen biota of Turkey. *Mycotaxon* 103: 123–126.
- Kınalıoğlu K. 2009a. Lichens from the Amasya, Corum, and Tokat regions of Turkey. *Mycotaxon* 109: 181–184.
- Kınalıoğlu K. 2009b. Additional lichen records from Giresun province, Turkey. *Mycotaxon*, 109: 137–140.
- Kınalıoğlu K, Engin A. 2004. Bülbülan (Artvin), Ayder, Anzer (Rize), Kalecik (Trabzon) ve Kümbet (Giresun) yaylalarının likenleri. *Ot Sistematiik Botanik Dergisi* 11(2): 167–190.
- Küçük M. 1990. Giresun Adası'nın floristik yapısı. *Ormancılık Araştırma Enstitüsü Yayınları* 36(2): 58.
- Özgen U, Aslan A, Terzi Z. 2003. Phytochemical screening of some lichen species collected from Giresun province. I. International Congress on the Chemistry of Natural Products (ICNP) 16–19 October, Trabzon, Türkiye.

- Purvis OW, Coppins BJ, Hawksworth DL, James PW, Moore DM. 1992. The lichen flora of Great Britain and Ireland. Natural History Museum & British Lichen Society, London.
- Scheidegger C. 1993. A revision of European saxicolous species of the genus *Buellia* De Not. and formerly included genera. *Lichenologist* 25(4): 315–364.
- Steiner J. 1909. Lichenes. In: Handel-Mazzetti HRE: Ergebnisse einer botanischen Reise das Pontische Randgebirge im Sandschak Trapezunt. *Annal. Naturhist. Hofmus. Wien* 23: 107–123.
- Süleyman H, Yıldırım D, Aslan A, Göçer F, Gepdiremen A, Güvenalp Z. 2002. An investigation of the antiinflammatory effects of an extract from *Cladonia rangiformis* Hoffm. *Biol. and Pharm. Bull.* 25: 10–13.
- Tufan Ö, Sümbül H, Özdemir Türk, A. 2005. The lichen flora of the Termessos National Park in Southwestern Turkey. *Mycotaxon* 94: 43–46.
- Wirth V. 1995. Die Flechten Baden-Württembergs. Ulmer, Stuttgart.
- Yazıcı K. 1996. Altındere Vadisi Milli Parkı liken florası. *Turkish Journal of Botany* 20: 263–265.
- Yazıcı K. 1999. Lichen flora of Trabzon. *Turkish Journal of Botany* 23: 97–112.
- Yazıcı K. 2006. Four new lichens from Turkey. *Myxotaxon* 95: 315–318.
- Yazıcı K, Aptroot A, Aslan A. 2007. Lichen biota of Zonguldak, Turkey. *Mycotaxon* 102: 257–260.
- Yazıcı K, Aptroot A. 2008. Corticolous lichens of the city of Giresun with descriptions of four species new to Turkey. *Mycotaxon* 105: 95–104.
- Yazıcı K, Aslan A. 2002. New records for the lichen flora of Turkey. *Turkish Journal of Botany* 26: 117–118.
- Yazıcı K, Aslan A. 2005. Six new lichen records from Turkey. *Mycotaxon* 93: 359–363.
- Zedda L, Schultz M, Rambold G. 2009. Diversity of epiphytic lichens in the savannah biome of Namibia. *Herzogia* 22: 153–164.